

SITE SAFETY PLAN

Project Name: Synkote Paints  
144-160 Van Riper Ave., Elmwood Park,  
Bergen County, N.J. 07407

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ERCS Delivery Order #: \_\_\_\_\_

TAT Technical Direction Document #: 02-890619

U.S. EPA Site I.D. #: W0502

Prepared In Conjunction With  
The U.S. Environmental Protection Agency,

Dwayne Harrington, OSC,

and

Roy F. Weston, Inc.

FOR:

The U.S. Environmental Protection Agency  
Region II - Emergency Response Section

Adopted By: \_\_\_\_\_  
For: S&D Environmental Services, Inc.

Date: \_\_\_\_\_

Adopted By: \_\_\_\_\_  
For Roy F. Weston, Inc.

Date: \_\_\_\_\_

Adopted By: \_\_\_\_\_  
For U.S. EPA

Date: \_\_\_\_\_

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## TABLE OF CONTENTS

	PAGE
INTRODUCTION AND SITE ENTRY REQUIREMENTS	1
1.0 SITE BACKGROUND AND SCOPE OF WORK	2
1.1 Roles and Responsibilities	2
1.2 Key Personnel	3
1.3 Site Background	4
1.4 Scope of Work for ERCS Contractor	4
1.5 Scope of Work for TAT	4
2.0 TASK SAFETY AND HEALTH RISK ANALYSES	5
2.1 Activity Specific Hazards and SOPs	5
2.2 General Site Hazards	7
2.3 Chemical Hazards	8
3.0 TRAINING AND FIT TESTING REQUIREMENTS	8
4.0 PERSONAL PROTECTIVE EQUIPMENT	8
4.1 Level A	8
4.2 Level B	9
4.3 Level C	10
4.4 Level D	10
4.5 Safety Equipment for Specific Tasks	10
4.6 Activity Specific Levels of Protection	12
5.0 MEDICAL MONITORING REQUIREMENTS	13
6.0 AIR MONITORING AND ACTION LEVELS	13
6.1 Routine Air Monitoring Requirements	13
6.2 Site Specific Air Monitoring Requirements	14
7.0 SITE CONTROL AND STANDARD OPERATING PROCEDURES	15
7.1 Work Zones	15
7.2 Field Safety and Standard Operating Procedures	16
8.0 DECONTAMINATION PROCEDURES	17
9.0 EMERGENCY RESPONSE PLAN	19
9.1 Emergency Contacts	19
9.2 Additional Emergency Numbers	20

9.6	Medical Emergencies	23
9.7	Fire or Explosion	23
9.8	Spills, Leaks, or Releases	23
9.9	Evacuation Routes	24
10.0	CONFINED SPACE ENTRY PROCEDURES	25

## **ATTACHMENTS**

- ATTACHMENT A - SITE SAFETY PLAN AMMENDMENTS**
- ATTACHMENT B - SITE MAPS**
- ATTACHMENT C - HEAT STRESS**
- ATTACHMENT D - SITE SAFETY PLAN ACKNOWLEDGEMENT FORM**
- ATTACHMENT E - CHEMICAL HAZARD INFORMATION (MSDS)**
- ATTACHMENT F - DRUM HANDLING SOP**
- ATTACHMENT G - DRUM SAMPLING SOP**
- ATTACHMENT H - LIQUID SAMPLING SOP**
- ATTACHMENT I - CONFINED SPACE ENTRY PROCEDURES**

## GLOSSARY OF ACRONYMS

ANSI	- AMERICAN NATIONAL STANDARDS INSTITUTE
APR	- AIR PURIFYING RESPIRATOR
ACGIH	- AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENIST
CFR	- CODE OF FEDERAL REGULATIONS
CGI	- COMBUSTIBLE GAS INDICATOR
CSEP	- CONFINED SPACE ENTRY PERMIT
ERCS	- EMERGENCY RESPONSE CLEAN-UP SERVICES
HNU-PID	- HNU PHOTOIONIZATION DETECTOR
IDLH	- IMMEDIATELY DANGEROUS TO LIFE & HEALTH
MREM/hr	- MILLI-ROENTGENS EQUIVALENT IN MAN PER HOUR
NIOSH	- NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY & HEALTH
OSC	- ON-SCENE COORDINATOR
OSHA	- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVA	- ORGANIC VAPOR ANALYZER
PPM	- PARTS PER MILLION
RM	- RESPONSE MANAGER
SCBA	- SELF-CONTAINED BREATHING APPARATUS
SOP	- STANDARD OPERATING PROCEDURE
SPCC	- SPILL PREVENTION CONTROLS & COUNTERMEASURES
TAT	- TECHNICAL ASSISTANCE TEAM
TLV	- THRESHOLD LIMIT VALUE
U.S. EPA	- U.S. ENVIRONMENTAL PROTECTION AGENCY

## INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed for this project to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received or conditions change and a safety plan modification is necessary to ensure the safety of workers or the public. A written amendment will document all changes made to the plan. Amendments to this plan are included in Attachment A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

### DAILY SAFETY MEETINGS

Daily safety meetings will be held at the start of each shift to ensure that all personnel understand site conditions and operating procedures, to ensure that personal protective equipment is being used correctly and to address worker health and safety concerns.

### SITE SAFETY PLAN ACCEPTANCE ACKNOWLEDGMENT

The OSC or designated representative shall be responsible for informing all individuals entering the exclusion zone of the contents of this plan and ensuring that each person signs the Safety Plan Acknowledgment Form in Attachment A. By signing the Safety Plan Acknowledgment Form, individuals are recognizing the hazards present on-site and the policies and procedures required to minimize exposure or adverse effects of these hazards.

### TRAINING REQUIREMENTS

All personnel (including visitors) entering the exclusion zone must have completed training requirements for hazardous waste site work in accordance with OSHA 29 CFR 1910.120, or be qualified by previous training or experience. Documentation of training requirements is the responsibility of each employer.

### MEDICAL MONITORING REQUIREMENTS

All personnel (including visitors) entering the exclusion zone must have completed appropriate medical monitoring requirements required under OSHA 29 CFR 1910.120(f). Documentation of medical monitoring is the responsibility of each employer. If there are additional medical monitoring requirements for this site, evidence of compliance must also be included.

## **FIT TESTING REQUIREMENTS**

All personnel (including visitors) entering the exclusion zone using a full-face negative pressure respirator must have successfully passed a qualitative respirator FIT test in accordance with OSHA 29 CFR 1910.1025; 1926.58; or, ANSI within the last 12 months. Documentation of FIT testing is the responsibility of each employer. If applicable, quantitative FIT testing is required for the use of negative pressure respirators for protection against airborne asbestos fibers and lead.

### **1.0 SITE BACKGROUND AND SCOPE OF WORK**

#### **1.1 ROLES AND RESPONSIBILITIES**

##### **On-Scene Coordinator (OSC):**

The OSC, as the representative of the U.S. EPA, is responsible for overall project administration and for coordinating health and safety standards for all individuals on-site at all times. All applicable OSHA standards shall be applied. However, each contractor (as an employer under OSHA) is also responsible for the health and safety of its employees. If there is any dispute with regards to health and safety, the following procedures shall be followed:

- 1) Attempt to resolve the issue on-site; and,
- 2) If the issue cannot be resolved, on-site personnel shall consult off-site supervisors for assistance and the specific task operation in dispute shall be discontinued until the issue is resolved.

##### **Response Manager (RM):**

The Response Manager, as the field representative for the ERCS clean-up contractor, has the responsibility for fulfilling the terms of the delivery order. The RM must oversee the project and ensure that all technical, regulatory and safety requirements are met. It is the RM's responsibility to communicate daily with the OSC regarding site clean-up progress and any problems encountered.

##### **Technical Assistance Team (TAT):**

The Technical Assistance Team is responsible for providing the OSC with assistance and support in regards to all technical, regulatory and safety aspects of site activity. The TAT is also available to advise the OSC on matters relating to sampling, treatment, packaging, labeling, transport, and disposal of haz-

ardous materials, but is not limited to the above-mentioned.

1.2 Key Personnel

U.S. EPA On-Scene  
Coordinator (OSC):

Dwayne Harrington  
Response and Prevention Branch  
Edison, New Jersey 08837  
(201) 906-6812

Alternate OSC:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Principle ERCS Contractor:

S&D Environmental Services, Inc.  
2 Gourmet Lane  
Edison, New Jersey 08837  
(201) 549-8778

Response Manager (RM)

George Press  
S&D Environmental Services, Inc.  
Thermal Kem

Subcontractors:

\_\_\_\_\_  
\_\_\_\_\_

Site Health & Safety Officer:

OSC Dwayne Harrington (EPA)

Alt. Health & Safety Officer:

Michael Mentzel (TAT)

Technical Assistance Team (TAT):

Roy F. Weston, Inc.  
1090 King Georges Post Road  
Suite 201  
Edison, New Jersey 08837  
(201) 225-6116

TAT Representatives:

Michael Mentzel  
Beverly Lawson

Other:

\_\_\_\_\_  
\_\_\_\_\_

1.3 Site Background



Synkote Paints manufactured solvent-based industrial coatings from 1956 until the company filed for bankruptcy in 1985. At that time, the building was abandoned and approximately 300 drums, containers, and reactor vessels were abandoned on the site. The property was foreclosed upon by the National Community Bank of New Jersey in 1986 for unpaid mortgage debts and purchased via a sheriff's sale in 1988 by Property Concepts, Inc., Elmwood Park, New Jersey. The building is currently unoccupied.

The site is located in a mixed residential/light industrial area at 144-160 Van Riper Avenue, Elmwood Park, New Jersey (Map 1). The site consists of one building of approximately 20,000 square feet, located on a one-half acre lot enclosed by an eight foot perimeter fence. The site is adjacent to an operating facility and is directly across the street from a residential neighborhood (Map 2). Approximately 5,000 people live within a one-half mile radius of the site.

The building consists primarily of two large storage/operations rooms (Map 3). The building is accessible through three building entrance doors, two large garage doors, and numerous windows. The current owner of the site has recently boarded the doors and windows of the building as a deterrent against break-ins and vandalism at the site.

There are approximately 300 drums, containers, and reactor vessels of hazardous substances that are stored on the site. Labels on some of the containers indicate the contents to be predominantly solvents, corrosives and paint waste solutions.

#### 1.4 Scope of Work for ERCS Contractor

Leaking and unsecured drums will be overpacked and staged in a secure area. Sampling of unknown material will be conducted to determine hazard characteristics and provide data to be utilized in a disposal or recycling effort. Compatible materials will be bulked as necessary for transport. Laboratory containers will be packaged in an approved manner for transport and disposal.

#### 1.5 Scope of Work for TAT

TAT will provide technical assistance including air monitoring during the staging/sampling of drums. Instruments to be used for site monitoring are OVA (organic vapor analyzer), Thyac III (radiation detector), Monotox (HCN & H<sub>2</sub>S) Detectors, and the CGI (combustible gas indicator). TAT will observe and photodocument ERCS on-site activities. Other activities include determination of disposal alternatives, cost accounting, air sampling as per OSHA

requirements and any other site specific tasks which may require technical expertise.

## **2.0 TASK SAFETY AND HEALTH RISK ANALYSIS**

This Hazard Assessment identifies the general hazards associated with specific site operations and presents an analysis of documented or potential chemical hazards that exist at the site. Every effort must be made to reduce or eliminate these hazards. Those which cannot be eliminated must be guarded against by use of engineering controls and/or personal protective equipment.

### **2.1 Activity Specific Hazards and SOPs**

#### **2.1.1 Hazards and SOPs Associated with Drum staging:**

- Splash hazard from leaking containers
- Flammable liquids
- Slip, trip, fall
- Heat stress - see Appendix for symptoms and treatment
- Inhalation of vapors/dusts
- Heavy equipment

Caution will be taken to avoid splashes and other physical hazards. Air monitoring will be performed prior to initiation of activity and during drum staging operations. All drums will be moved from their original location to the staging area. Drums with contents are to be staged neatly in double rows on plastic sheeting. Each drum is to be marked on the top and on side with a unique identifying number. Any drums that are leaking or whose contents may cause severe hazardous conditions are to be immediately overpacked.

#### **2.1.2 Hazards and SOPs Associated with Drum sampling:**

- Splash hazard from leaking containers
- Flammable liquids
- Slip, trip, fall
- Heat stress - see Appendix for symptoms and treatment
- Inhalation of vapors/dusts
- Heavy equipment

Caution will be taken to avoid splashes and other physical hazards. Air monitoring will be performed prior to initiation of activity and during drum sampling operations. Non-sparking tools will be used to open drums. All sampling of unknown materials will be performed in level B protection using the buddy system. Communication with the command post will be maintained at all times. Sample wastes will be disposed of

with site waste. Downgrading of protection levels will be by OSC approval and contingent upon air monitoring and sample analysis results of all unknown materials.

#### 2.1.3 Hazards and SOPs Associated with Drum bulking:

- Splash hazard from leaking containers
- Flammable liquids
- Slip, trip, fall
- Heat stress - see Appendix for symptoms and treatment
- Inhalation of vapors/dusts
- Heavy equipment

After categorizing the contents of the drums they will be opened and emptied into bulking chambers. This will be accomplished remotely using a drum grapppler attached to a back hoe. The bulking chambers will be inspected for any residual material before use. Only pumps properly rated for hazardous liquids that have a safety release valve and splash shield will be used. Pump hoses, casings, fittings, and gaskets will be inspected for weak spots and compatability with material being pumped. Drum puncturing will be done with non-sparking tools. Drums will be washed using a decontamination solution suited for the contaminants. The use of any solvents will require an additional soap and water wash. The use of flammable solvents will be discouraged and used only as a last resort. All wash liquid will be properly bulked and containerized for either treatment or disposal. The now clean drums will be crushed and staged on a clean plastic sheet.

#### 2.1.4 Hazards and SOPs Associated with Lab Packing :

- Splash hazard from leaking containers
- Flammable liquids
- Slip, trip, fall
- Heat stress - see Appendix for symptoms and treatment
- Inhalation of vapors/dusts
- Heavy equipment

The lab packing operation will take place in two stages. The first stage of the operation will consist of sockpiling all laboratory containers in a secure and orderly manner in the lab area. These tasks will be performed in level B protection. The second stage of the operation will entail the actual packing of the lab containers into fiber drums. At this point all containers will have been identified and categorized. This stage will be performed in level B protection. ERCS will provide continuous air monitoring.

### 2.1.5 Hazards Associated with Building Decontamination

- Splash hazard from leaking containers
- Flammable liquids
- Slip, trip, fall
- Heat stress - see Appendix for symptoms and treatment
- Inhalation of vapors/dusts
- Heavy equipment

Scraping floors to remove gross contamination will be accomplished with non-sparking scrappers. The walls and floors will then be washed with a high pressure water laser. All wash liquids will be collected for proper disposal. These tasks will be performed in level C protection.

### 2.2 General Site Hazards

Lighting - Work areas must have adequate lighting for employees to see to work and identify hazards (5-foot candles) minimum comparable to a single 75-100 watt bulb). Personnel should carry flashlights in all normally dark areas for use in the event of a power failure. Applicable OSHA standards for lighting - 29 CFR 1910.120 (m) - shall apply.

Electrical Power - All electrical power must have a ground fault circuit interrupter as part of the circuit. All equipment must be suitable and approved for the class of hazard. Applicable OSHA standards for electrical - 29 CFR 1926 Subpart "K" shall apply.

Walkways, etc. - Damaged and deteriorated buildings often contain unguarded walkways, doors, etc. where a fall potential exists. These must be guarded and/or posted to prevent employee use or passage. Areas where work will not be performed will be closed off and posted. Applicable OSHA standards for walkways, stairways, etc. - 29 CFR 1926.500 shall apply.

High or elevated work - All work over four-foot in elevation or where a fall potential exists will be performed using appropriate ladders and/or fall protection (i.e. body harness and lifeline).

Drum Handling - The movement and opening of drums will be done in accordance with 29 CFR 1910.120 (j).

Cold Stress - When the temperature falls below 40°F, cold stress protocol shall be followed. Employees must be supplied with adequate clothing to maintain core temperature.

Heat Stress - When the temperature exceeds 70°F and personnel are

wearing protective clothing, a heat stress monitoring program shall be implemented as appropriate. Employees shall have access to break periods and drinking water as necessary. Heat stress is discussed in detail in Attachment D.

Eye Wash Protection - All operations involving the potential for eye injury, splash, etc., must have approved eye wash units locally available as per 29 CFR 1910.151 (c).

Fire Protection/Fire Prevention - Operations involving the potential for fire hazards shall be conducted in a manner as to minimize the risk. Non-sparking tools and fire extinguishers shall be used or available as appropriate. Sources of ignition shall be removed. When necessary, explosion-proof instruments and/or bonding and grounding will be used to prevent fire or explosion.

Utilities - Overhead and underground utility hazards shall be identified and or inspected prior to conducting operations involving potential contact.

## **2.3 CHEMICAL HAZARDS**

See attached appendix E containing material safety data sheets for many of the materials found on-site.

## **3.0 TRAINING AND FIT TESTING REQUIREMENTS**

Refer to Introduction for Site Entry Requirements.

## **4.0 PERSONAL PROTECTIVE EQUIPMENT**

The following is a brief description of the personal protective equipment which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment.

### **4.1 Level A Protection Shall Be Used When:**

- o The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- o Substances with a high degree of hazard to the skin are known or suspected;
- o Chemical concentrations are known to be above IDLH levels;

- o Biological hazards requiring Level A are known or suspected; or,
- o Unknown organic vapor concentrations range from 500 - 1,000 ppm.

**4.1.1 Level A Protective Equipment at a Minimum Shall Consist of:**

- o Fully encapsulating exposure suit (selected for resistance to chemical(s) at the site);
- o Chemical resistant boot covers worn over safety-toe work boots;
- o Chemical resistant outer gloves (disposable);
- o Chemical resistant inner gloves (disposable);
- o Pressure demand SCBA or airline system with egress bottles;
- o Hard-hat;
- o Disposable outer suit (optional);
- o Use of the "buddy system" for site entry personnel and appropriate back-up support personnel.

**4.2 Level B Protection Shall Be Used When:**

- o The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- o Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- o Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible;
- o Confined space entry requires Level B; or,
- o Unknown organic vapor concentrations range from 5 to 500 ppm and a significant skin hazard is not anticipated.

**4.2.1 Level B Protective Equipment at a Minimum Shall Consist of:**

- o Chemical-resistant coverall: (Type) Saranex/Poly-coated Tyvek;
- o Steel-toe work boots with chemical-resistant overboots or disposable boot covers: (Type) Rubber;
- o Disposable inner gloves, surgical type;
- o Disposable outer gloves: (Type) Neoprene;
- o Supplied air - pressure demand SCBA or airline system with 5-minute egress bottle;
- o Hard hat; and,
- o All joints taped with duct tape.

**NOTE:** Use of Level B personal protective equipment requires that two (2) persons must be available as backup ready to provide emergency assistance.

#### **4.3 Level C Protection Shall Be Used When:**

- o The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- o The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants;
- o The substance has adequate warning properties and all criteria for the use of APR respirators has been met; and,
- o 1-5 ppm of unknown organic vapors above background levels are anticipated.

##### **4.3.1 Level C Protective Equipment at a Minimum Shall Consist of:**

- o Chemical-resistant coveralls: (Type) Saranex/Poly-coated Tyvek;
- o Steel-toe work boots with chemical-resistant overboots or disposable boot covers: (Type) Rubber;
- o Disposable inner gloves, surgical type;
- o Disposable outer gloves: (Type) Neoprene/Solvex/Nitrile;
- o Full-face air purifying respirator (APR);
- o Chemical cartridge or canister type MSA GMC-H or equivalent
- o Hard hat; and,
- o All joints taped with duct tape;
- o Note tyvek may be substituted as coveralls when only dust contaminate is present;
- o Note surgical gloves may be substituted as disposable outer gloves when only a dust contaminate is present.

#### **4.4 Level D Protection Shall Be Used When:**

- o The atmosphere contains no known hazard; and,
- o Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

##### **4.4.1 Level D Protection Equipment at a Minimum Shall Consist of:**

- o Standard work uniform or coveralls;
- o Safety-toe work boots;
- o Gloves as needed;
- o Safety glasses;
- o Splash shield as needed; and,
- o Hard-hat.

#### **4.5 Safety Equipment Which May Be Required For Specific Tasks:**

- o Chemical-resistant aprons;
- o Acid suits;

- o Goggles;
- o Face shields;
- o Five-minute escape device;
- o Welders goggles or shields; and,
- o Hearing protection.

Any level of protection can be modified to suit a specific type of hazard found on site.



#### 4.6 Activity Specific Levels of Protection:

The required level of protection is specific to the activity being conducted. At this site the minimum levels of protection are as follows:

<u>Activity</u>	<u>Level of Protection</u>	<u>Special Requirements</u>
Drum sampling and staging	B	Air monitoring for organic vapors and explosive atmospheres will be conducted in and around unknowns.
Lab packing	B	Air monitoring for organic vapors and explosive atmospheres will be conducted in and around unknowns.
Entry and air monitoring in hot zone for any activity	B	Locations outside the hotzone may be monitored in level D.

## 5.0 MEDICAL MONITORING REQUIREMENTS

Refer to Introduction for Site Entry Requirements.

## 6.0 AIR MONITORING AND ACTION LEVELS

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site.

### 6.1 Routine Air Monitoring Requirements:

- o Upon initial entry to rule out IDLH conditions;
- o When the possibility of an IDLH condition or flammable atmosphere has developed;
- o When work begins on a different portion of the site;
- o Contaminants other than those previously identified are being handled;
- o A different type of operation is initiated;
- o Employees are handling leaking drums or containers or working in areas with obvious liquid contamination; and,
- o Continuously during confined space work.

Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and submitted to the OSC and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

## 6.2 Site Specific Air Monitoring Requirements:

Instrument	Compounds To Detect	Frequency	Comments/ Action Level
Combustible Gas Indicator (CGI)	Explosive/ Flammable Atmospheres	Periodically as determined by the OSC & as per 6.1	25% LEL - operations cease cease immediately & actions investigated
Oxygen Meter	Oxygen	Periodically as determined by the OSC & as per 6.1	<19.5% wear SCBA CGI readings not valid.  19.5%-25% normal ambient air.
Radiation Meter	Radiation	Upon dis- covery of any new found materials  Periodically as determined by the OSC & as per 6.1	0.01-0.02 MREM/hr average back- ground.  < 2 MREM/hr continue inves- tigation with caution.  > 2 MREM/hr potential radia- tion hazard - continue only on advice of health physician.
HNU-PID and/or OVA	Organic vapors and gases.	Periodically as determined by the OSC & as per 6.1	>5 ppm upgrade PPE for unknowns TLV upgrade to Level B for knowns >500 ppm upgrade to Level A

## **7.0 SITE CONTROL AND STANDARD OPERATING PROCEDURES**

### **7.1 Work Zones:**

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons. At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry. Site work zones will include:

#### **7.1.1 Exclusion Zone:**

The exclusion zone will be the "hot-zone" or contaminated area inside the site perimeter. Entry to and exit from this zone will be made through a designated point and all personnel will be required to sign the hot zone entry/exit log located at the decon area. Appropriate warning signs to identify the exclusion zone should be posted (i.e. "DANGER - AUTHORIZED PERSONNEL ONLY", "PROTECTIVE EQUIPMENT REQUIRED BEYOND THIS POINT", etc.) Exit from the exclusion zone must be accompanied by personnel and equipment decontamination as described in Section 8.0.

#### **7.1.2 Decontamination Zone:**

The decontamination zone will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. All personnel and equipment should exit only via the decon area. A separate decontamination area will be established for heavy equipment.

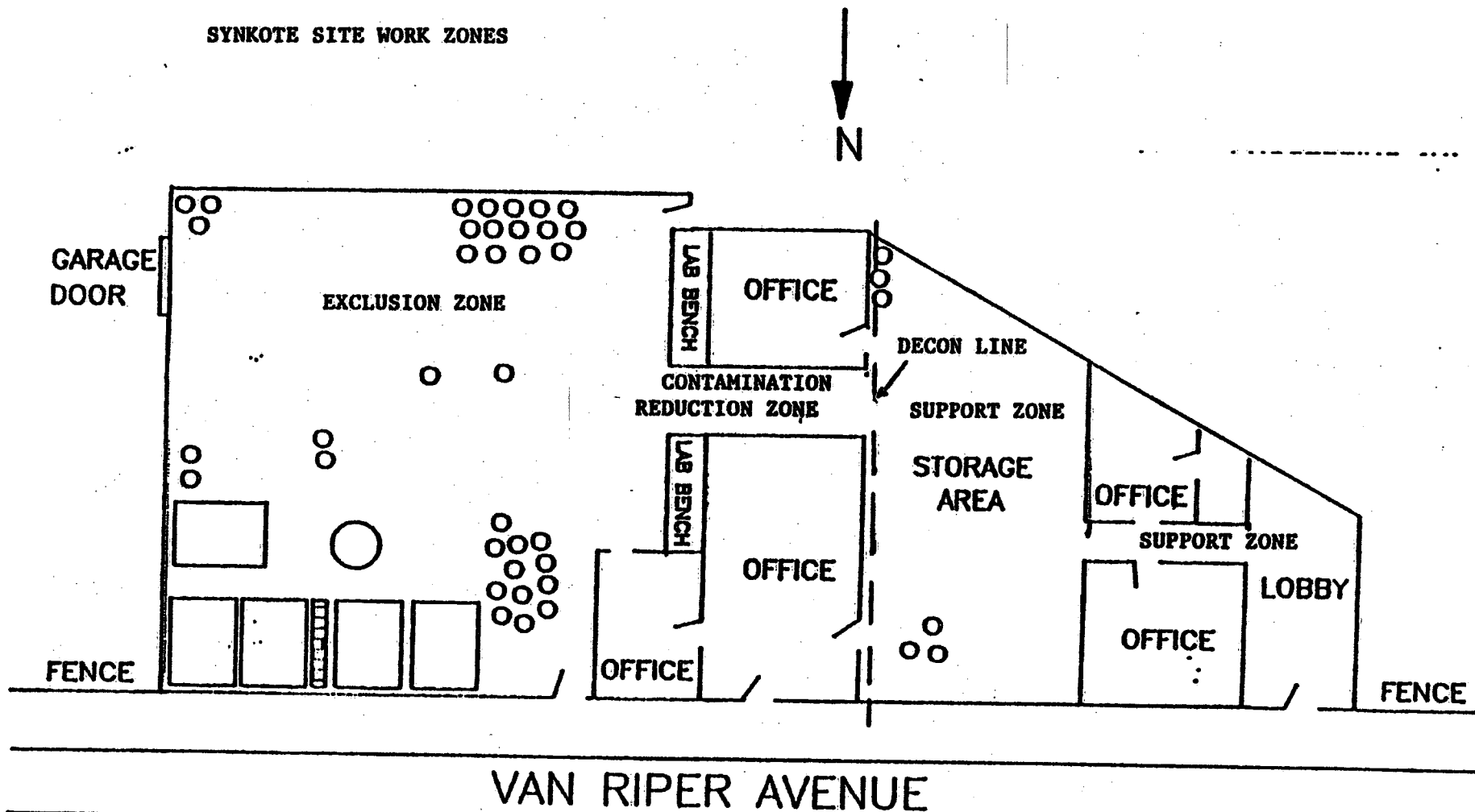
#### **7.1.3 Clean Zone:**

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

All personnel arriving in the support zone should upon arrival, report to the command post and sign the site entry/exit log.

A map of the work zones for this site follows.

# SYNKOTE SITE WORK ZONES



SPILL PREVENTION &  
EMERGENCY RESPONSE DIVISION

In Association with ICF Technology Inc., C.C. Johnson & Associates, Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

EPA PM

TAT PM

## **7.2 General Field Safety and Standard Operating Procedures:**

- o The "buddy system" will be used at all times by all field personnel. No one is to perform field work alone. Maintain visual, voice or radio communication at all times.
- o Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contact by bagging.
- o Eating, drinking, or smoking is permitted only in designated areas in the support zone.
- o Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activities.
- o Beards or other facial hair that interferes with respirator fit are prohibited.
- o All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- o All personnel exiting the exclusion zone must go through the decontamination procedures described in Section 8.0.
- o Safety Equipment described in Section 4.0 will be required for all field personnel unless otherwise approved by the Site Health and Safety Officer.
- o Practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs.

## **8.0 DECONTAMINATION PROCEDURES**

In general, everything that enters the exclusion zone at this site, must either be decontaminated or properly discarded upon exit from the exclusion zone. All personnel, including any state and local personnel must enter and exit the hot zone through the decon area. Prior to demobilization, contaminated equipment will be decontaminated and inspected by the OSC before it is moved into the clean zone. All material that is generated by decontamination procedures will be stored in a designated area in the exclusion zone until disposal arrangements are made.

All personnel must sign the "HOT ZONE ENTRY/EXIT LOG" when entering and exiting the exclusion zone.

NOTE: The type of decontamination solution to be used is dependent on the type of chemical hazards. The decontamination solution for this site is soap and water. Decontamination solution will be changed daily (at a minimum) and collected and stored on-site until disposal arrangements are finalized.

### **8.1 Procedures for Equipment Decontamination:**

Following decontamination and prior to exit from the hot zone, the OSC or a designated alternate, shall be responsible for insuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.

### **8.2 Procedure for Personnel Decontamination:**

This decontamination procedure applies to personnel at this site wearing Level B and C protection. These are the minimum acceptable requirements:

#### **Station 1: Segregated Equipment Drop**

Deposit equipment used on-site (tools, sampling devices and monitoring instruments, radios, etc.) on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

#### **Station 2: Outer Boot and Outer Glove Wash and Rinse**

Scrub outer boots and outer gloves with decontamination solution or detergent water. Rinse off using large amounts of water.

#### **Station 3: Outer Boot and Glove Removal**

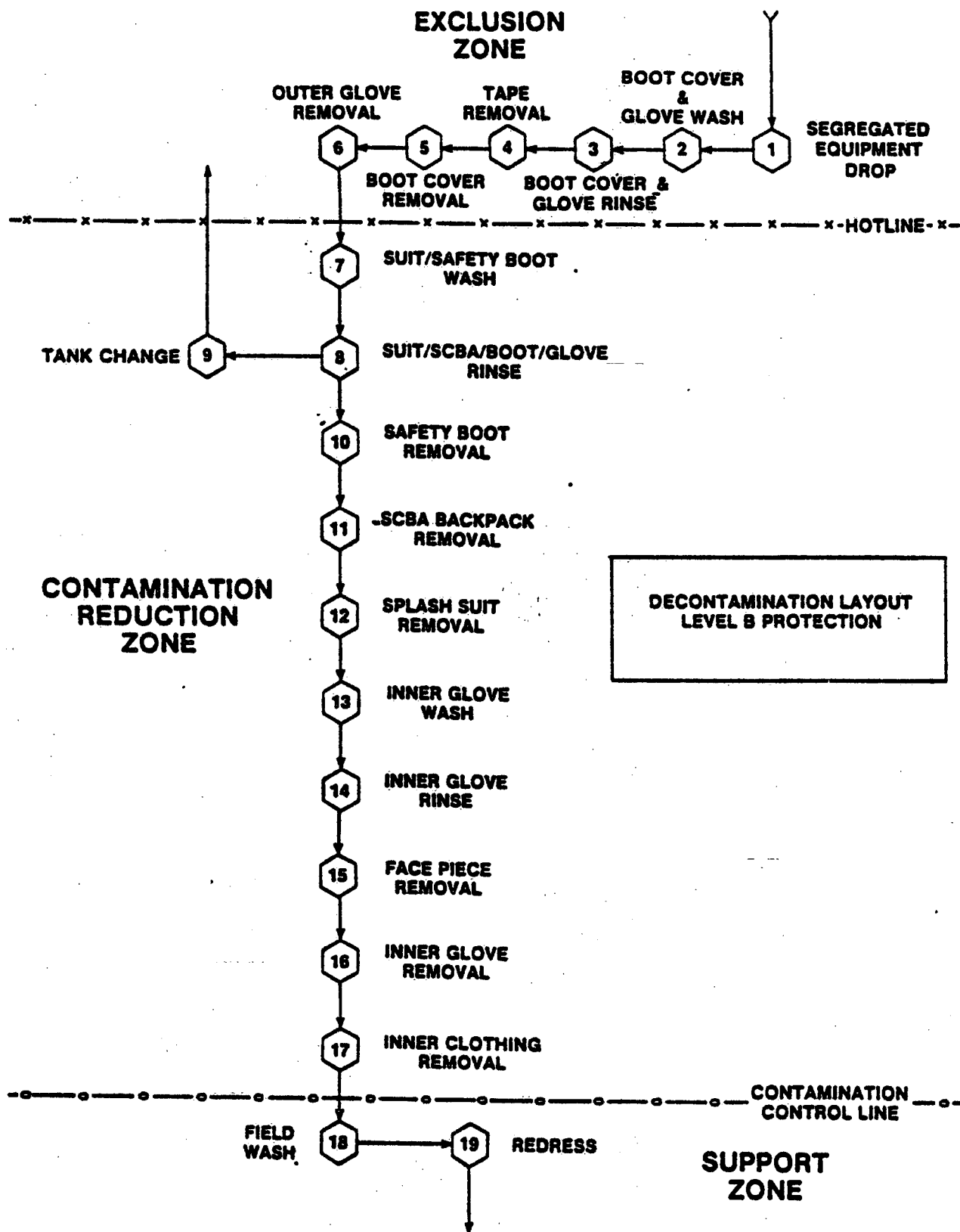


FIGURE A5-1



ENVIRONMENTAL RESPONSE TEAM



Remove outer boots and gloves. If outer boots are disposable, deposit in container with plastic liner. If non-disposable, store in a clean dry place.

Station 4: Outer Garment Removal

Remove Chemical Resistant Outer Garments and deposit in container lined with plastic. Dispose of splash suits as necessary.

Station 5: Respiratory Protection Removal

Remove hard-hat, face-piece, and if applicable, deposit SCBA on plastic sheets. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off SCBA and store in safe place.

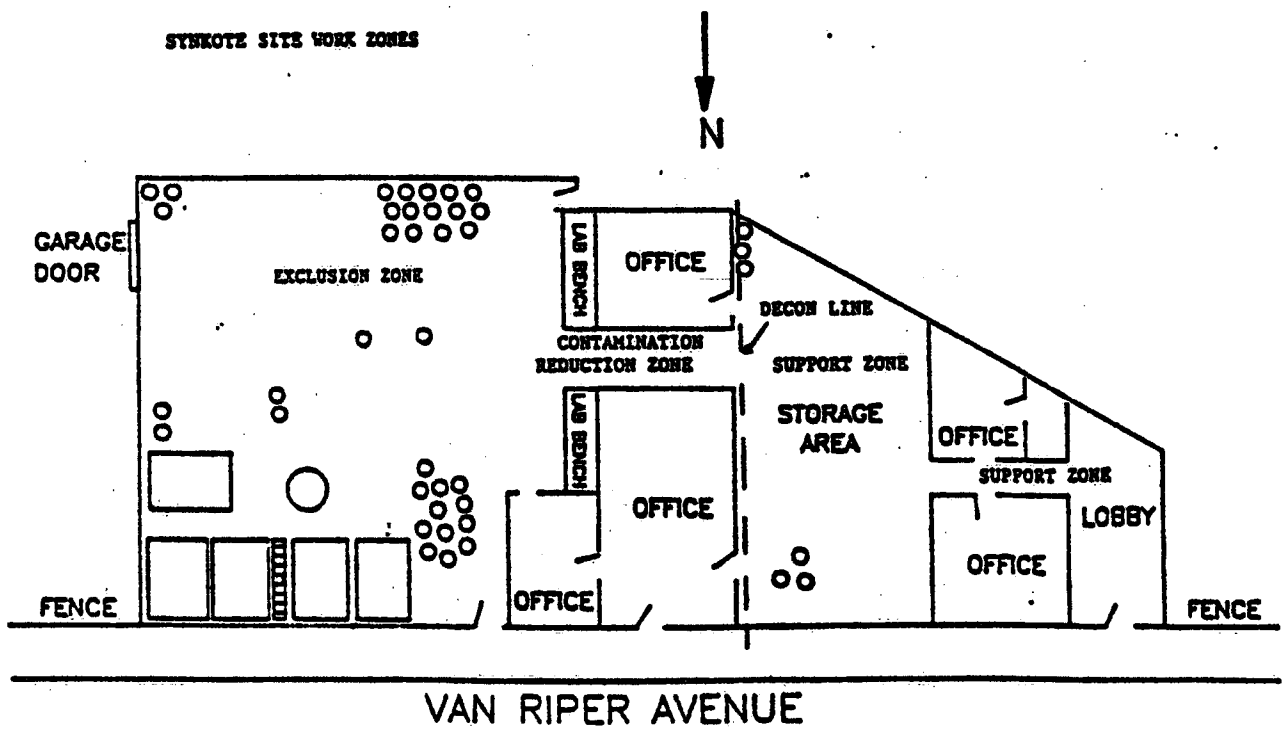
Station 6: Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 7: Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

A sketch of the decon area for this site is shown below.



## 9.0 EMERGENCY RESPONSE PLAN

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

### 9.1 Emergency Contacts:

Fire: Grove street . 796-0700 \_\_\_\_\_

Police: Market street 796-0700 \_\_\_\_\_

Ambulance: Through fire/police dispatch 796-0700 \_\_\_\_\_

Hospital: Hackensack Hospital \_\_\_\_\_

Address: 30 Prospect Ave \_\_\_\_\_

Telephone: 441-2300 \_\_\_\_\_ Chemical Trauma Capabilities? yes

Poison Control Center: \_\_\_\_\_

### Directions from Site to Hospital (See Map in Section 9.4):

Make left out of site parking lot. Make left at stop onto Boulevard. Make second left onto Market, go under Parkway. Go past Kennedy hospital on right. Market becomes Essex st. stay on Essex st. Make left onto Prospect Ave. Go one block and make right into emergency room.

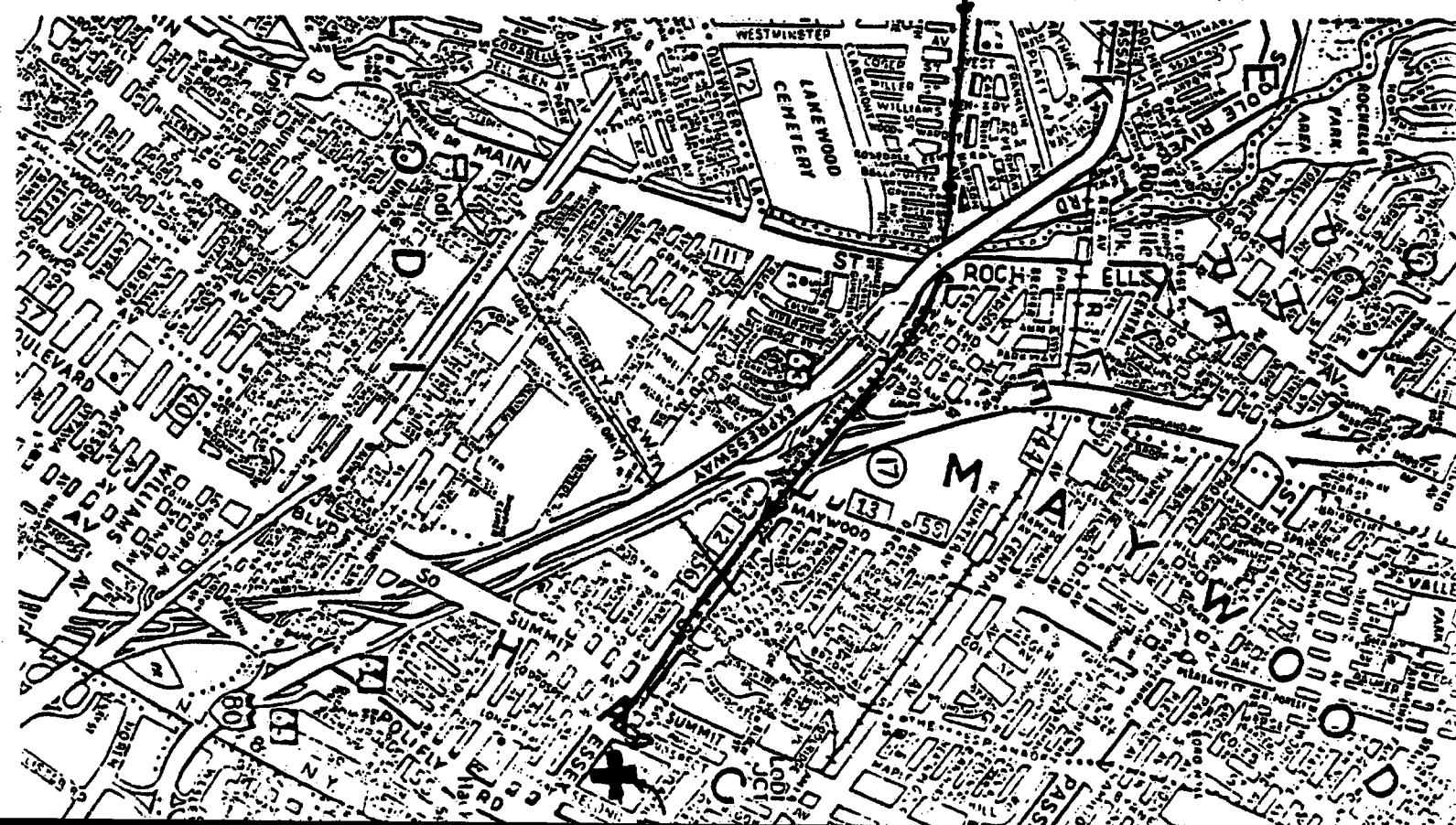
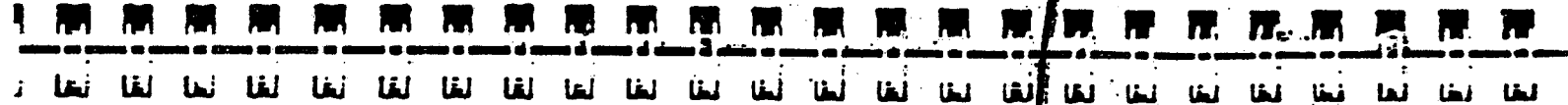
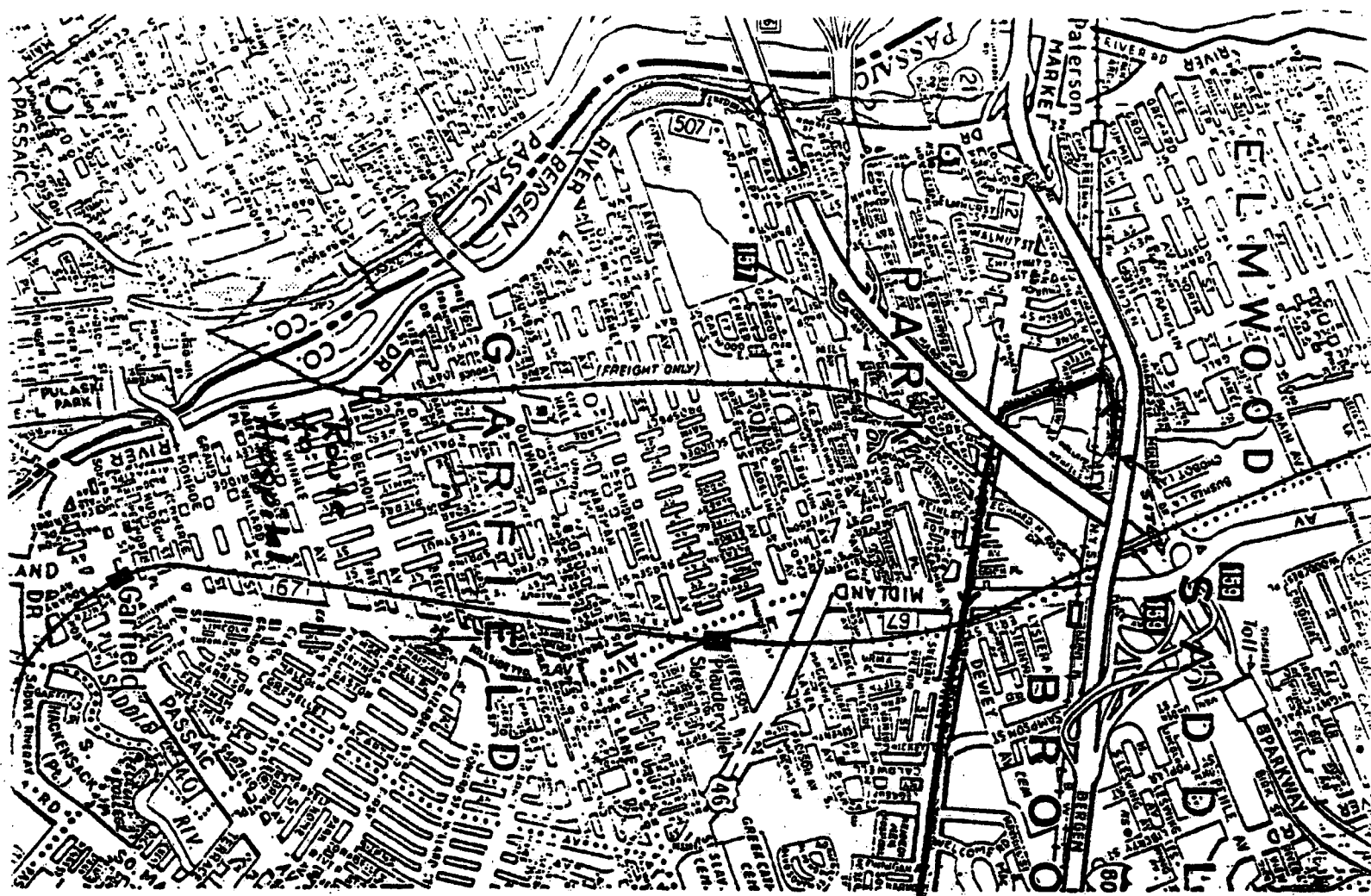
NOTE: Maps and directions to the hospital will be posted in the office, decon trailers and decontamination area.

The route to the hospital was verified by: Michael Mentzel (TAT) on 9/22/8. Distance from site to hospital is 4.5 miles. Approximate driving time is 15 minutes. The fire, police, and hospital were notified of site operations by \_\_\_\_\_ on \_\_\_\_\_.

The following individuals have been trained in CPR and First Aid:

Michael Mentzel \_\_\_\_\_

Dwayne Harrington \_\_\_\_\_



9.2 Additional Emergency Numbers:

Chemtrec	(800) 424-9300
TSCA Hotline	(800) 424-9065 (202) 544-1401
ATSDR	(Day) (404) 329-3311
	(Night) (404) 566-7777
AT & F (Explosives Info.)	(800) 424-9555
National Response Center	(800) 424-8802
Weston Medical Emergency Service	(513) 421-3063
Weston 24 Hour Hotline	(215) 524-1925, 1926
Pesticide Information Service	(800) 845-7633
EPA ERT Emergency	(201) 321-6660
RCRA Hotline	(800) 424-9346
CMA Chemical Referral Center	(800) 262-8200
National Poison Control Center	(800) 942-5969
U.S. DOT	(202) 366-0656 (Day only)
	(202) 426-2075 (Hotline)
Weston TAT Office	(201) 225-6116
TAT ZPMO	(201) 524-1160
U.S. EPA Region II R&P	
Branch Hotline	(201) 548-8730
S&D Environmental Services, Inc.	(201) 549-8778 (24 hour emergency line)

**9.3 EMERGENCY EQUIPMENT AVAILABLE ON-SITE**

**Communications Equipment**

**Location**

Public Telephones: \_\_\_\_\_

Private Telephones: \_\_\_\_\_

Mobile Telephones: \_\_\_\_\_

Two-Way Radios: \_\_\_\_\_

**Medical Equipment**

First Aid Kits: \_\_\_\_\_

Inspection Date: \_\_\_\_\_ By: \_\_\_\_\_

Stretcher/Backboard: \_\_\_\_\_

Eye Wash Station: \_\_\_\_\_

Oxygen: \_\_\_\_\_

Safety Shower: \_\_\_\_\_

**Fire-Fighting Equipment**

Fire Extinguishers: \_\_\_\_\_

Inspection Date: \_\_\_\_\_ By: \_\_\_\_\_

Other: \_\_\_\_\_

**Spill or Leak Equipment**

Absorbent Boom/Pads: \_\_\_\_\_

Dry Absorbent: \_\_\_\_\_

**Additional Emergency Equipment**

\_\_\_\_\_  
\_\_\_\_\_

## **9.5 Project Personnel Responsibilities During Emergencies:**

### **ON-SCENE COORDINATOR (OSC)**

As the administrator of the project, the OSC has primary responsibility for responding to and correcting emergency situations. the OSC must:

- o Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, up-grading or down-grading the level of protective clothing and respiratory protection, or total evacuation and securing of the site.
- o Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- o Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- o Ensure that appropriate treatment or testing for exposed or injured personnel is obtained;
- o Determine the cause of the incident and make recommendations to prevent the recurrence; and,
- o Ensure that all required reports have been prepared.

### **RESPONSE MANAGER (RM)**

The RM must immediately report emergency situations to the OSC, take appropriate measures to protect site personnel and assist the OSC as necessary in responding to and mitigating the emergency situation.

### **TECHNICAL ASSISTANCE TEAM (TAT)**

The TAT must immediately report emergency situations to the OSC, take appropriate measures to protect site personnel and assist the OSC as necessary.

### 9.9 Evacuation Routes and Resources:

Evacuation routes have been established by work area locations for this site. All buildings and outside work areas have been provided with two designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency. See site map for evacuation routes.

- o Evacuation notification will be a continuous blast on an air horn, vehicle horn, or by verbal communication via radio.
- o Keep upwind of smoke, vapors or spill location.
- o Exit through the decontamination corridor if possible.
- o If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
- o The OSC will conduct a head count to insure all personnel have been evacuated safely.
- o In the event that emergency site evacuation is necessary, all personnel are to:
  1. escape the emergency situation;
  2. decontaminate to the maximum extent practical; and,
  3. meet at the command post.
- o In the event that the command post is no longer in a safe zone, MEET: IN THE EAST PARKING LOT LOCATED ADJACENT TO THE SITE.

#### 10.0 CONFINED SPACE ENTRY PROCEDURES

A confined space is defined as a space or work area not designed or intended for normal human occupancy, having limited means of access and poor natural ventilation, and or any structure, including buildings or rooms which have limited means of egress. Examples include tanks, vats, and basements. Confined spaces identified at this site are listed below. If a confined space entry is conducted, it will be done in accordance with procedures presented in Attachment I.

<u>Type of Confined Space</u>	<u>Location On-Site</u>	<u>Comments</u>
-------------------------------	-------------------------	-----------------

\* Presently no confined space situations have been identified at this site. However, if any situations are found strict adherence to the attached safety protocols will be followed.\*



**ATTACHMENT 4F**

**DRUM HANDLING SOP**

## APPENDIX B

DRUM HANDLING, DRUM SAMPLING, SPECIAL WASTE HANDLING,  
AND TANK SAMPLING PROTOCOL

Drum and Special Waste Handling Protocol

- A Personnel involved in handling and transporting drummed waste shall work in teams containing no fewer than two people. Visual contact shall be maintained between members of the working team at all times. All team members shall be able to communicate between themselves and with the Safety Officer by two-way radio at all times on the work site.**
- B Preliminary Classification**
1. Prior to physically handling a drum, the following preliminary classifications check list shall be completed:
    - a. Is the drum radioactive?
    - b. Does the drum exhibit leakage or deterioration, i.e., is it unsound?
    - c. Does the drum exhibit apparent internal pressure?
    - d. Is the drum empty?
    - e. Does the drum contain markings which would indicate that the contents are potentially explosive?
  2. The results of the preliminary classification checklist shall dictate which specific procedures specified below shall be followed.
- C Leaking or Deteriorated Drums**
1. The contents of drums that exhibit leakage or apparent deterioration such that movement will cause rupture (determined by the Safety Officer) shall immediately be transferred to a repack drum. Equipment, including transfer pumps used in the repack operation, shall be of explosion proof construction.
  2. Leaking drums containing sludges or semi-solids, drums that are structurally sound but which are open and contain liquid or solid waste, and drums which are deteriorated but can be moved without rupture, shall be immediately placed in overpack containers.

**D Bulged Drums**

1. Drums which potentially may be under internal pressure, as evidenced by bulging, shall be sampled in place. Extreme care shall be exercised when working with and adjacent to potentially pressurized drums.
2. Should movement of a pressurized drum be unavoidable, handling shall be by a grappler unit constructed for explosive containment. The bulged drum shall be moved only as far as necessary to allow seating on firm ground or shall be carefully overpacked.
3. Openings into pressurized drums shall be plugged and the bung holes fitted with pressure venting caps set at 5 psi release.

**E Drums Containing Explosive or Shock Sensitive Waste**

1. Drums that contain wastes that have been identified by sampling, or are suspected by visual examination to be explosive in nature, shall be handled with extreme caution. Initial handling shall be by a grappler unit constructed for explosive containment. Drums shall be palletized prior to transport to high hazard interim storage and disposal area.
2. If at any time during remedial activities, an explosive, pursuant to provisions of Title 18, U.S. Code, Chapter 40 (Importation, Manufacture, Distribution, and Storage of Explosive Materials, 1975 Explosives List) is identified, it should be secured and the appropriate state and federal agencies notified.
3. Identification of an explosive substance during the course of a remedial action is usually based on the experience of the on-site personnel. Potentially explosive materials usually may be identified by their physical characteristics -- texture, color, density, etc., as well as the way they are packaged or labeled. Most explosives are solids. In some cases they are packaged in water-tight containers to exclude water, while in other cases they are packaged wet to preclude explosion.
4. Prior to handling or transporting drums containing explosive wastes, personnel working in the area shall be removed to a safe distance. Continuous contact with the communication base shall be maintained until handling or transporting operations are complete. An audible siren signal system, similar to that employed in conventional blasting operations, shall be used to signify the commencement and completion of explosive waste handling or transporting activities.

**F Drums Containing Radioactive Waste**

1. Drums containing radioactive wastes shall not be handled until radiation levels have been determined by an initial field survey conducted by the contractor. Survey shall include direct gamma readings and laboratory analysis of drum surface wipe samples.

2. Depending on the level of radiation encountered, handling and transport may require special shielding devices to protect personnel. Following handling and transport, equipment used shall be surveyed by the Safety Officer and decontaminated to background levels prior to recommending work. Surveys shall also be made of the ground surface in the vicinity of original drum storage to identify potential soil contamination by spilled or leaked radioactive waste. Prior to recommending work in the area, radioactive soil areas shall be isolated to prevent tracking of radioactive contaminants about the site.

#### **G Packaged Laboratory Wastes (Lab Packs)**

1. Drums known or suspected of containing discarded laboratory chemicals, reagents or other potentially dangerous materials in small volume, or individual containers shall be handled with extreme caution. Until otherwise categorized, they shall be considered explosive or shock sensitive wastes. Initial handling shall be by a grappler unit constructed for explosive containment. Drums shall be palletized and overpacked if required prior to transport to the Lab Pack staging for sorting, identification, repacking and/or stabilization.
2. Prior to handling or transporting Lab Packs from the existing drum area, personnel working in the immediate area shall be removed to a safe distance. Continuous contact with the communication base shall be maintained until handling or transporting operations are complete. An audible siren signal system, similar to that employed in conventional blasting operations will be used to signify the commencement and cessation of Lab Pack handling or transporting activities.

#### **H Air Reactive Wastes**

1. If the presence of an air reactive substance is verified or even suspected by a contractor, the material should be immediately segregated and transported to a separate high hazard interim storage and disposal area.
2. Air reactive wastes may be discovered during opening or sampling operations. Air reactive substances normally require special packaging. They may be stored under water or some other liquid to minimize air contact. They may also be found in sealed ampules, corrugated drums, stainless steel canisters, or specially lined drums. Some chemicals, such as white phosphorus or barium oxide, react with oxygen in the air, while others, such as sodium, cesium or various metal hybrids, react with the moisture or water vapor in the air. Many of these compounds are explosive when they come in contact with air or water.

## **I Gas Cylinders**

1. Gas cylinders, when encountered, should be stored and disposed of on a specific case basis depending on the integrity of the cylinders and type of substance they are expected to contain.

## **J Empty Drums**

1. Empty drums containing less than 1 in. of solid residual waste and those resulting from on-site bulking and repack operations shall be loaded by grappler into transport equipment and placed within the empty drum staging area. Residuals, where possible, shall be transferred to repack containers prior to movement. Additional information on the definition of empty drums can be found in 40 CFR 261.7. Also, limitations on the reuse of drums can be found in 49 CFR 173.23.

## **K General Drum Handling Procedures**

1. The handling, movement, and transport of drums should be by use of mechanical equipment only; no drums should be handled manually.
2. Remote drum handling equipment shall consist of a grappler equipped backhoe or front end loader. Drum transportation should be with front end loaders or fork lifts with modified carrying platforms.

Portions of equipment that contact drums or canisters should be constructed of non-ferrous metals or contact portions should be coated or lined to preclude spark generation.

Handling and transport equipment should be equipped with full frontal and side splash and explosion shields. Class ABC fire extinguishers shall be fitted to the body of each piece of equipment.

Equipment should be maintained in first class condition. The ignition manifold and exhaust components shall be maintained to prevent backfiring or generation of sparks within the exhaust gases.

**ATTACHMENT ~~11~~**  
**DRUM SAMPLING SOP**

G

## DRUM SAMPLING SOP

### Introduction

Many hazardous waste disposal sites and industrial facilities have containers on-site that may have to be sampled as part of investigations initiated under RCRA and CERCLA programs. These containers, specifically drums, may have a wide range of contents, including all types of inorganic and organic chemicals with a variety of physical and chemical characteristics. Since the opening and sampling of these drums could release toxic vapors or cause a violent reaction, such operations should be handled with the utmost safety precautions.

### Preliminary Assessment

Once a decision to sample has been made, the site should be evaluated and the following information obtained:

1. Categorization of drums

The entire number of drums should be assessed and categorized into those containing the same or similar chemicals as well as unknown contents. Each of these categories should be considered as a separate group for sampling purposes.

2. The number, type and condition of drums

Prior to any sampling, the number of drums to be sampled should be determined. Depending on the needs of the program, these drums can be selected by accessibility or randomly. When selecting drums, it is important to select only top bung drums that are in good condition. Deteriorated drums (i.e., rusted, corroded, bulging, etc.) should not be opened or moved as the risk of a rupture or spill is greatly enhanced when dealing with these types of containers.

3. The suitability of the site for a safe and efficient operation

Care should be taken to insure the safety of the surrounding populace by checking proximity of the site to local residences, highways, railroads or other facilities. A contingency plan should be prepared and discussed with all pertinent personnel prior to initiating the operation. The plan should address mitigatory actions in the event of a spill, leak or explosion.

#### 4. Hazards associated with the site

A thorough attempt should be made to ascertain the nature of the material in the drums to be sampled or moved. This can be done in a number of different ways including, review of past analyses, site history, employee and former employee interviews, etc. Any information related to the site should be considered in developing the contingency plan.

#### Pre-sampling Preparation

A sampling team should be formed based on information gathered in the preliminary assessment and the needs of the program. The sampling team should consist of at least three members, a team leader and two samplers. When possible, a designated safety officer should be included as an additional team member to assist in the development of the sampling and safety plans.

#### Drum Opening

The selection of a safe drum opening technique should be based on the information available on the contents of the drum. For drums that contain a known substance, the opening procedure may not be as complex as that for drums containing an unknown substance.

##### 1. Containers with known contents

At least two persons should be used to sample drums. The samplers should be equipped with the proper safety equipment to deal with the material in the drum. If there is any doubt as to the nature of the drummed material, the drum should be handled as if the contents are unknown.

Drums with known contents that are not reactive or extremely volatile can be opened by hand with a non-sparking bung wrench. Drums that contain a reactive or volatile compound should be opened with a remote opener.

##### 2. Containers with unknown contents

When opening a drums with unknown contents, it is highly recommended that the drum be opened in an area away from the main drum storage area. Methods for container movement are covered in Technical Methods for Investigation of Sites Containing Hazardous Substances, Technical Monograph No. 20, section 20.4.1.

Samplers that plan to open drums of unknown material should use a remote bung opening device. The personal protective gear for this operation should be at a minimum level B (SCBA and chemical protection suit). EPA's National Enforcement Investigation Center (NEIC) has developed two remote control



drum opening devices, a side penetrating device and a bung remover. For other than emergency response operations, the penetrating device is inappropriate and therefore is not discussed in this SOP.

The bung remover is designed to be used on vertical top bung drums only. The opener should only be used on drums of known integrity, i.e., not rusted or corroded. It is also recommended that the smaller diameter bung be opened first, if possible, as this operation requires less torque.

To set up the apparatus, the drum bracket should be aligned with the wrench bracket directly over the bung to be opened, and fastened securely to the drum. The non-sparking bung socket should then be placed on the bung and the impact wrench fastened into the drum bracket. The sampler should now attach the low pressure air hose to the drill and then return to the low pressure tank. The opening operation requires a short (2-5 second) burst of air from the tank. (The distance from the drum to the low pressure tank is variable depending on length of hose or the predesigned safety area). If the bung has not been loosened, the sampler should return to the drum to recheck the setup.

Some common causes of problems are:

- 1) The drill is loose in its bracket.
- 2) The drill direction is reversed.
- 3) The drum bracket is not aligned properly.

If the set-up seems satisfactory, the drill should set up to remove the larger bung and the operation repeated. If the drum does not open after repeated attempts, another drum should be selected.

### Sampling

The sampling method to be used is determined by the physical state of the drummed material (solid, liquid, sludge, etc.). It is important to coordinate the sampling effort with the laboratory. The lab will be able to indicate the amount of sample needed to perform the desired analysis.

#### 1. Liquid Waste

To sample waste, a 4-foot length of glass tube should be used. The inside diameter of the tube will be dependent on the viscosity of the material (for most liquids, 6 to 8 mm I.D. tube should be adequate). To sample, one person should insert the tube into the drum. By sealing the top of the tube with a stopper or thumb, the sampler can extract a sample from the drum. The other sampler should be holding the sample container and assist in transferring the material to the

container. After collecting the sample, the glass tube is broken and placed in the drum.

**Note:** Sampling personnel should observe if multi-phase liquid layers are in the glass tube. Samples of each phase may be obtained using the same method. This will require separate sample containers for each phase if drum waste characterization is being performed.

## **2. Sludge Waste**

For sludges, a larger bore glass tube may be needed. This may require removing the larger bung. A 40 ml glass vial fastened to a wooden dowel can be used in lieu of a large bore glass tube. The glass tube or vial and dowel should be disposed of properly, e.g., placed in the drum that was sampled, buried on-site, etc.

**Note:** If the small bung has already been removed, the large bung can be removed with a bung wrench.

## **3. Solid Waste**

Occasionally, a drum containing a solid or granular waste may have to be sampled. These types of drums, often constructed of fiberboard, are easily sampled with a disposable scoop if the drum is an open-top. If the drum is closed, a brass or wood spoon attached to a wooden dowel may be used. To obtain core samples, two tools are recommended: a grain sampler or a sampling trier.

The grain sampler consists of two slotted telescoping tubes, usually made of brass or stainless steel. The outer tube has a conical, pointed tip on one end that permits the sampler to penetrate the material being sampled.

To sample:

1. Insert the sampler in the closed position into the material to be sampled.
2. Rotate the inner tube to open the sampler and wiggle the tube to allow materials to enter the device.
3. Remove the sampler from the material and transfer contents to appropriate sample container.

A typical sampling trier is a long tube with a slot that extends almost its entire length. The tip and edges are sharpened to allow easier penetration into the material to be sampled. The use of the trier is similar to that of the grain

sampler discussed above. However, the trier is preferred when sampling moist media.

To sample:

1. Insert the trier into the waste material at a slight angle and rotate the trier once or twice to cut a core of material.
2. Slowly withdraw the trier, making certain that the slotted portion is facing upward.
3. Transfer the sample to an appropriate container using a brush or spatula.

Only about 20 to 30 grams of this type of material are required for analysis.

Since both of these samplers are reusable, they should be decontaminated (pre-cleaned) in the field using cleanser and water and brought to the lab for solvent washing.

Note: Some of these solid materials may be reactive when exposed to the atmosphere. The sampler should note any changes in the physical characteristics (i.e. heat build-up, color change) of the sample and retreat to a safe area to discuss mitigatory procedures. It is recommended that non-sparking tools be used when sampling granular or solid media.

#### Drum Closing

After completion of the sampling activities, the drum should be resealed using a bung wrench.